

Green Energy Parks Program



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Federal Utility Partnership Working Group
Meeting
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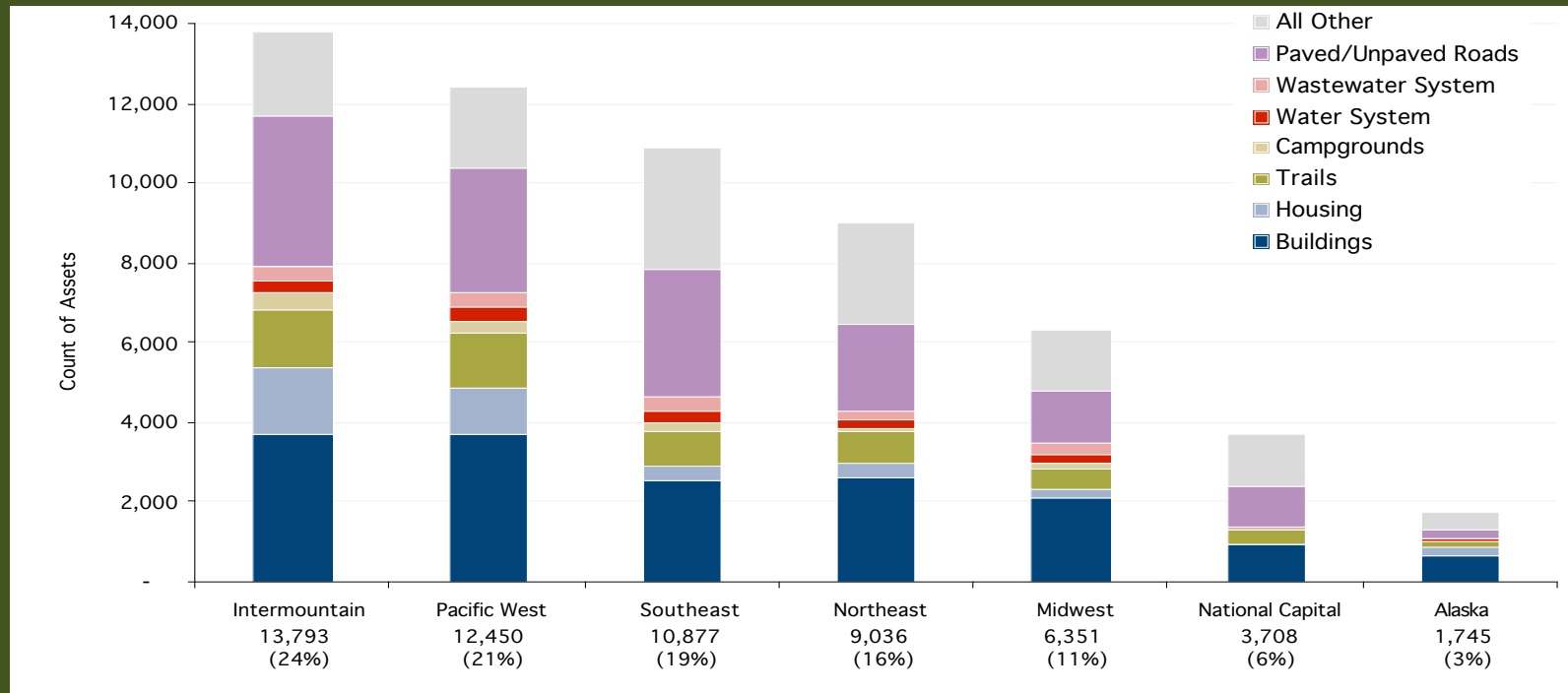
Overview

- Energy Consumption in the NPS
- Green Energy Parks Program
- Questions and Discussion



NPS Energy Consumption

NPS Assets by Type and Region

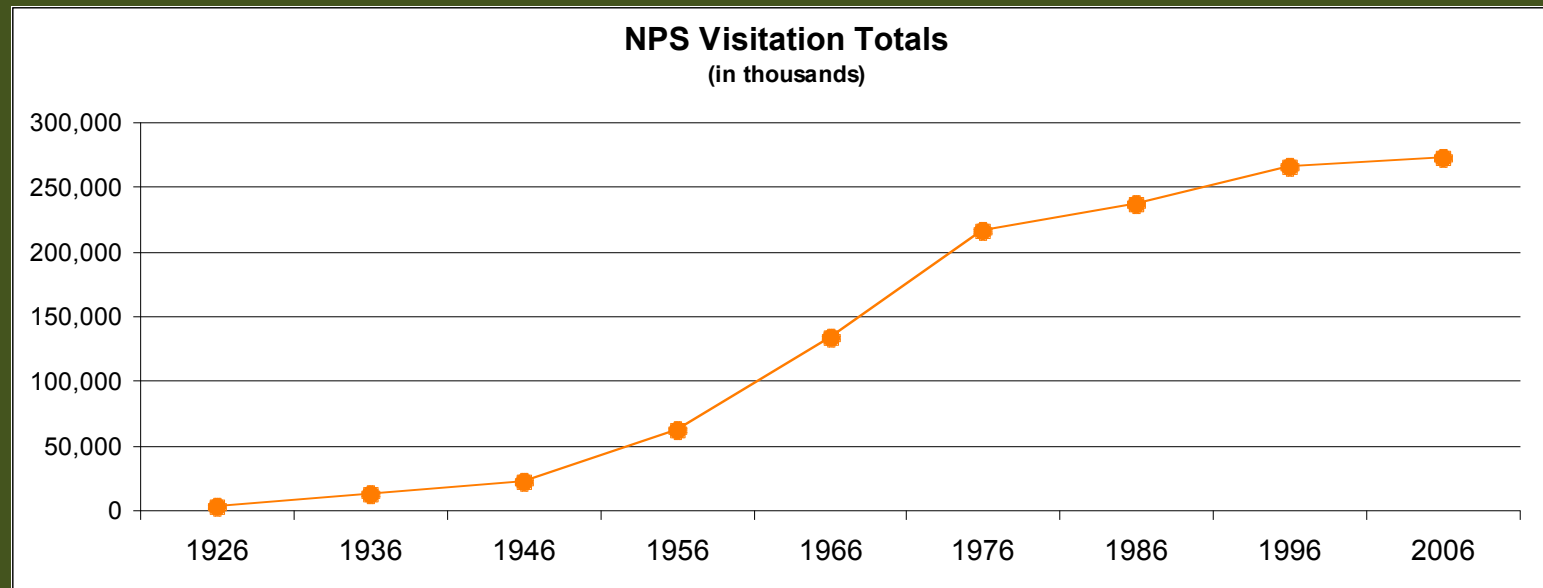


- The NPS is comprised of 391 units encompassing more than 8 million acres—with tens of thousands of assets within seven regions

NPS Inventory Summary

Asset Type	Count	Quantity	Unit	DM	CRV	FCI	DOI FCI
Buildings	16,401	26,911,511	SF	\$1,404 M	\$7,834 M	0.18	18%
Housing	4,065	6,035,146	SF	\$189 M	\$1,241 M	0.15	15%
Trails	5,445	77,346,070	LF	\$459 M	\$2,508 M	0.18	18%
Campground	1,155	7,660	AC	\$120 M	\$407 M	0.29	29%
Water Systems	1,452	32,428,501	GPD	\$335 M	\$2,130 M	0.16	16%
Wastewater Systems	1,692	19,534,788	GPD	\$216 M	\$931 M	0.23	23%
Paved/Unpaved Roads ²	14,760	10,000	MI	\$4,150 M	\$18,608 M	0.22	22%
Subtotal	44,970			\$6,872 M	\$33,657 M	0.20	20%
All Other ³	12,990	n/a	n/a	\$1,652 M	\$75,768 M	NA	NA
Total	57,960			\$8,524 M	\$109,425 M	NA	NA

NPS Visitation



- National parks draw more visitors every year than the NFL, MLB, NHL, NCAA Football, and NCAA Basketball sporting events combined – **Nearly 300 Million Visitors Annually**
- The NPS employs approximately 20,000 permanent, temporary, and seasonal workers as well

NPS Energy Consumption

- Thousands of assets and employees, together with millions of visitors leads to considerable energy consumption in National Parks.

NPS Annual Energy Consumption

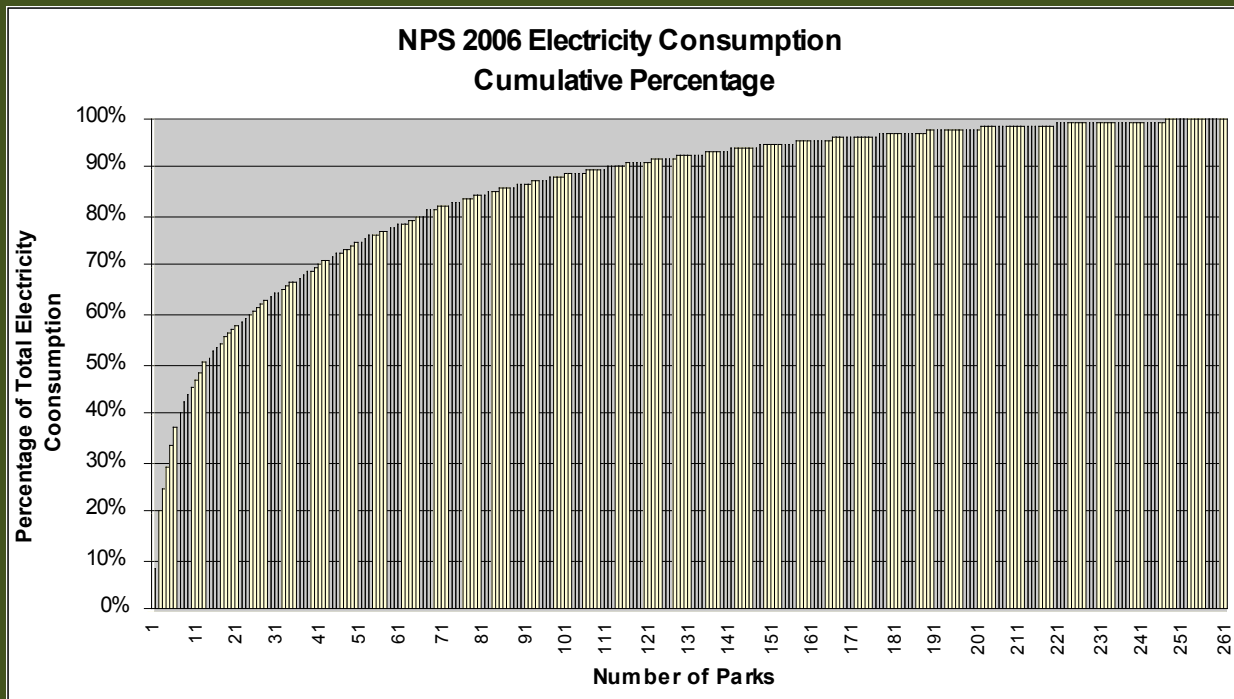
- Electricity

- Over 200,500 Megawatt-hours (MWh) of electricity was consumed at the parks in 2007
- This is equivalent to powering nearly 20,000 homes
- About \$25 Million spent on electricity annually

- Electricity Use per Square Foot

- Average 8.4 kilowatt-hours/sq ft (this is lower than most commercial buildings in the US)
- 20 parks are “high users”, consuming over 15 kWh/sq ft

Cumulative Electricity Consumption



- 15 Largest Parks Consume 50% of NPS Electricity
- 25% of Parks Consume 80%
- High visitation and high energy use parks: clear opportunities
- Also shows that we have many smaller parks that are marginal consumers (75% of our parks consume 20% of electricity)

NPS Annual Energy Consumption

- Natural Gas
 - 270+ Million Cubic Feet
- Propane
 - 1.3 Million Gallons
- Carbon Emissions
 - Estimated at over 38,000 Metric Tons annually from Electricity, Propane and Natural Gas alone

Green Energy Parks Program

Working to improve energy efficiency and
renewable energy opportunities at our parks

Green Energy Parks Program

- Established 1999, MOU signed by DOI & DOE Secretaries. Purpose:
 - Promote the use of energy efficient and renewable energy technologies and practices in the NPS
 - Educate the visiting public about these efforts



GEPP: Activities

- GEPP Activities have included:
 - Solar power design and installation
 - Wind turbine installation
 - Educational materials
 - Alternative fuel vehicles
 - Energy audits
 - Energy efficient technologies
 - Clean Cities Partnerships
 - Assessment of renewable energy potential in NPS



Memorandum of Understanding '08

- Primary Goals
 - Identify opportunities to initiate and expedite deployment and promotion of energy efficiency and renewable energy
 - Prioritize opportunities based on the greatest educational and energy use impact potential
- NPS Centennial Initiative (2016) used as a vehicle to ensure that National Parks are a proving ground for energy conservation



Conclusion: Questions/Discussion

- Where we need your help!
 - Working with utilities to:
 - Collect data through our metering program
 - Identify opportunities for energy audits and energy conservation measures
 - Installing or using renewable power
 - Partnering with our parks and others (for example, universities through our University-National Park Energy Partnership Program) to engage in energy related projects at the parks



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